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DETAILED ACTION

Claim Status

Pending: 1, 18, 20, 22-35, and 37-40

Rejected: 1, 18, 20, 22-35, and 37-40

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 20, 23, 27, 28, 32-34, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley (EP 0,278,607) and Noel (FR 2,816,802) and Richardson (2,491,766).

Regarding claim 1, Kateley discloses a leaf-stripping device, comprising a suction blower (fig.1, 1 & 2) and leaf-stripping tools (3) arranged in front of the suction blower; wherein the blower (1, 2) is configured for producing an air stream through the stripping tools (3) for drawing leaves so that the stripping tools can excise the leaves of the plant (col.2, lines 12-16). However, Kateley does not disclose a leaf-stripping tool comprising a first and a second rotatable cylinder arranged substantially parallel to each other, and wherein the first rotatable cylinder is coupled to a drive motor.

Noel discloses a leaf-stripping device comprising a leaf-stripping tool comprising first (fig.2, 1A) and second (1B) rotatable cylinders arranged substantially parallel to each other, wherein the first rotatable cylinder (1A) is coupled to a drive motor (M1); wherein the leaves are selectively pressed between the first rotatable cylinder (1A) and the second rotatable cylinder (1B) in order to tear the leaves off plants. Using the rollers help to eliminate projections of particles of jagged sheets and decrease the high rate of wound to the fruit bunches (Refer to the English translation of Noel, pg, 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the leaf-stripping tool of Noel for the leaf-stripping tool of Kateley as an alternate leaf-stripping

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tool sufficient in stripping leaves from vines and the predictable result is a leaf-stripping tool that eliminates projections of particles of jagged sheets and decreases the high rate of wound to the bunches and other fruits.

Furthermore, the combination of Kateley and Noel fails to disclose that said first rotatable cylinder includes a plurality of circumferentially extending, closed peripheral grooves which are axially spaced apart from one another disposed thereon; wherein the blower is configured for producing an air stream through the grooves for drawing leaves between the first rotatable cylinder and the second rotatable cylinder.

Richardson teaches that it is old and well known in the material handling and/or roller art for a first rotatable cylinder (fig.5, 16) of a pair of rotatable cylinders (figs.4-5, 16 and 17), which cooperate with the air stream caused by a suction blower 6 to convey materials, to include a plurality of circumferentially extending, closed peripheral grooves which are axially spaced apart from one another disposed thereon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first rotatable cylinder of the combination to include a plurality of circumferentially extending, closed peripheral grooves which are axially spaced apart from one another, similar to the roller of Beck, since the use of peripheral grooves on one of a pair of rollers is old and well known in the harvesting art and the predictable result is a more efficient roller.

Given the combination of Kateley, Noel, and Richardson, since the first rotatable cylinder (Kateley: 1A) of the combination includes the circumferentially extending, closed peripheral grooves (Richardson: see roller 16), the blower (Kateley: 1, 2) is capable of producing an air stream through the grooves for drawing leaves between the first and second rotatable cylinders.

Regarding claim 20, since the applicant does not explicitly disclose the size of the fruit, the examiner views that the width and depth of the grooves (shown in roller 16 of Richardson) on the cylinder (1A of Kateley) of the combination corresponds "roughly" to the size of a fruit, dependent on the type and size of the fruit.

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Regarding claim 23, the combination of Kateley, Noel, and Richardson further discloses the leaf-stripping device of claim 1, wherein the second cylinder (1B of Noel) is not coupled to the motor and is spring-loaded against the other of the first cylinder (pg.3, lines 21-23 and pg. 6, lines 6-10).

Regarding claim 27, the combination of Kateley, Noel and Richardson discloses the leaf-stripping device of claim 1, except wherein the second cylinder has a wiper mechanism for scraping foliage extending over its length.

Richardson further teaches that it is old and well known in the material handling and/or roller art for similar cylinders or rollers (16, 17) to have wiper mechanisms (fig.4, scraper plates 37 and 38) extending over its length, for "[removing] any material which might stick to the rollers" (col.3, lines 68-73).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the leaf-stripping device of the combination above to include a wiper mechanism (12) for the second cylinder, as taught by Richardson, in order to provide means for removing any material which might stick to the rollers and thus providing a more efficient roller.

Regarding claim 28, the combination further discloses the leaf-stripping device of claim 1, wherein the first and second cylinders (1A/1B of Noel) are aligned substantially vertically and are arranged in a common flow channel with the suction blower (1 & 2 of Kateley).

Regarding claim 32, the combination discloses the leaf-stripping device of claim 1 above, except for a plurality of pairs of first and second cylinders, arranged one behind the other. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a plurality of pairs of first and second cylinders to the leaf-stripping device, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *In re Harza*, 124 USPQ 378. See MPEP 2144.04(VI). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the plurality of pairs of first and second

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cylinders one behind the other, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. See MPEP 2144.04(VI).

Regarding claims 33 and 34, the combination further discloses the leaf-stripping device of claim 1 comprising means for mounting the device (fig.3 and col.3, line 34-col.4, line 10 of Kateley) on the front of a vehicle (fig. 3 & 6, tractor 31), per claim 3; wherein the vehicle is a tractor (31 of Kateley), per claim 34.

Regarding claim 40, due to the combination above, and since the applicant does not explicitly disclose the size of the objects, the grooves (shown in roller 16 of Richardson) are capable of selectively trapping said objects from being suctioned into the air stream, depending on the size of said objects.

Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley in view of Noel and Richardson, as applied to claim 1 above, and further in view of Beck (2,610,634).

Regarding claim 25, the combination of Kateley, Noel, and Richardson discloses the leaf-stripping device according of claim 1, except wherein the second cylinder includes an elastic peripheral surface.

Beck teaches that it is old and well known in the harvesting art for the first cylinder (29) with the peripheral grooves (111) to be paired with a second cylinder (115) made of an elastic peripheral surface (col.6, lines 4-6: resilient roll, col.5, lines 62-64: resilient material, which can be a rubber compound).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the second cylinder of the combination to include an elastic peripheral surface as taught by Beck since the use of an elastic peripheral surface to ensure leaves or husks adheres to the cylinder is old and well known in the harvesting art and the predictable result is a more efficient cylinder.

Regarding claim 26, the combination further discloses the leaf stripping device of claim 25, wherein a peripheral surface of the second cylinder includes an elastomer (col.5, lines 62-64: rubber).

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Claim 18, 24, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley in view of Noel and Richardson, as applied to claims 1 or 23 above, and further in view of Bou (FR 2,417,932).

Regarding claim 18, the combination of Kateley, Noel, and Richardson discloses the leaf-stripping device of claim 1 above, except wherein the cylinders are designed so that foliage is separated from a plant, and fruits of the plant are not damaged.

Bou discloses a leaf-stripping device wherein the cylinders are designed so that the foliage is separated from a plant, and fruits of the plants are not damaged, by providing a second cylinder (18) with a smaller diameter than that of the first cylinder (11) (pg.2, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cylinders of the combination above such that the second cylinder (Noel: 1B) has a smaller diameter than the first cylinder (Noel: 1A), as taught by Bou, in order to ensure foliage is separated from the plant while preventing the fruits from being damaged.

Regarding claim 24, the combination of Kateley, Noel, and Richardson discloses the leaf-stripping device of claim 23 above; but fails to specify wherein the second cylinder is supported in a lever mechanism and wherein pressure springs bear against the lever mechanism to bias the second cylinder toward the first cylinder.

Bou discloses a leaf-stripping device wherein a second cylinder (18) is supported in a lever mechanism, wherein pressure springs (20) bear against the lever mechanism to bias the second cylinder toward the first cylinder (11) in order to provide means for rotating the second cylinder without the use of another motor thus simplifying the device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the leaf-stripping device of the combination above to use a lever mechanism to support the second cylinder as taught by Bou in order to provide means for rotating the second cylinder without the use of second motor and thus simplifying the overall device.

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Regarding claim 29, referring to the rejection of claim 18 above, the combination of Kateley, Noel, Richardson, and Bou discloses the leaf-stripping device of claim 23, wherein a diameter of the second cylinder (1B of Noel modified similarly to 18 of Bou) is smaller than the diameter of the first cylinder (1A of Noel similar to 11 of Bou).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley in view of Noel and Richardson, as applied to claim 1 above, and further in view of Praca (3,712,034).

Regarding claim 22, the combination of Kateley, Noel, and Richardson discloses the leaf-stripping device of claim 1 above, except wherein the first rotatable cylinder is made from a plastic so as to have a hydrophobic surface.

Praca teaches that it is old and well known in the harvesting art for a similar cylinder (roll 23, particularly referring to end portions 44) to be made of non-deformable materials, such as plastic, in order to have good qualities of adhesion (col.3, lines 53-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first rotatable cylinder of the leaf-stripping device of the combination to be made of plastic as taught by Praca in order to ensure that foliage adheres to the first cylinder due to its good qualities of adhesion.

With regards to the limitation that said second cylinder is plastic *so as to have a hydrophobic surface*, due to the modification of Praca, the second cylinder of the combination of Kateley, Noel, Richardson, and Praca is made of plastic, therefore having a hydrophobic surface.

Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley and Noel and Richardson and Bou, as applied to claim 18 above, and further in view of Calmer (2003/0172639)

Regarding claim 30, the combination of Kateley, Noel, Richardson, and Bou further discloses wherein the first (1A of Noel) and second (1B) cylinders are spanned partially by a cover plate (guide plates 5 of Kateley) arranged on a side facing the foliage that has a cutout (aperture 11). "The guide plates (5) is to partially align the plant material with the cutting apparatus in advance of it as the cutter

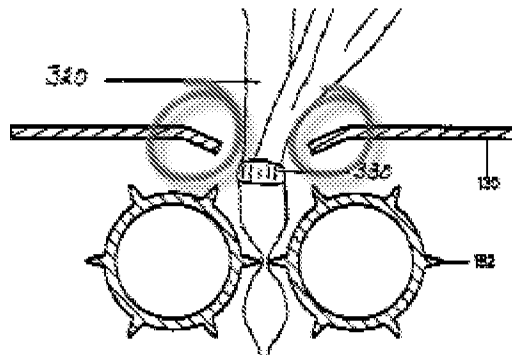
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moves along the foliage to be cut, thus making the passage easier and further reducing the chances of vine wood being damaged by passing straight into the cutout blades" (col.2, line 52-col.3, line 3).

However, the combination fails to disclose a cutout with an entry incline for the foliage.

Calmer teaches that it is desirable for a cutout entry towards a pair of stripping rollers in a similar harvesting device to have an entry incline (see mod.fig.9 below; curved shape) to allow smooth flow of unwanted portions, which are leaves in the case of the leaf-stripping device (para. [0052], lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cutout of the combination to have an entry incline, as taught by Calmer, in order to allow smooth flow of leaves into the leaf-stripping device.



Modified Figure 9 of Calmer

Regarding claim 31, the combination of Kateley, Noel, Richardson, Bou, and Calmer further discloses wherein the cover plate (5 of Kateley) is fastened to a flow channel on a side facing the foliage.

Claims 35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley, Noel, Richardson, as applied to claim 1 above, and further in view of Calmer (2003/0172639).

Regarding claim 35, and referring to the rejection of claim 30 above, the combination of Kateley, Noel, Richardson, and Calmer discloses the leaf-stripping device of claim 1, the first and second cylinders (Noel: 1A, 1B) are spanned partially by a cover plate (Kateley: 5) arranged on a side facing the foliage that has a cutout (Kateley: 11), wherein the cutout includes an incline (Calmer: see mod.fig.9 above)

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along an edge of the cutout. With the addition of the incline due to the modification of Calmer, air flow is minimized towards the cylinder that the incline slants to.

Regarding claim 39, the combination discloses the leaf-stripping device of claim 35 but fails to show that the incline is located at a rearward edge of the cutout; however, since the cutout (11 of Kateley) is circular, the incline could be located throughout the edge of the cutout in order to allow flow of leaves into the cutout to be smoother. Furthermore, it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. See also, *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the incline at a rearward edge of the cutout with respect to the working direction of the leaf-stripping device, and angled towards the second cylinder, since it has been held that rearranging parts of an invention involves only routine skill in the art.

Claims 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kateley, Noel, Richardson, and Calmer, as applied to claim 35 above, and further in view of Praca (3,712,034) and Beck (2,610,634).

Regarding claims 37-38, and referring to the rejection of claim 22 above, the combination of Kateley, Noel, Richardson, Calmer, Praca, and Beck discloses the leaf-stripping device of claim 35, wherein the first rotatable cylinder (Noel: 1A) is made from a plastic (per Praca teaching) so as to have a hydrophobic surface configured for reducing leaf crush between the hydrophobic peripheral surface and the second rotatable cylinder, per claim 37; wherein the second rotatable cylinder (Noel: 1B) includes an elastic peripheral surface (per Beck teaching) configured for reducing leaf crush between the elastic peripheral surface and the first rotatable cylinder, per claim 38. Since the first rotatable cylinder (1A) is made of plastic (per Praca teaching) and the second rotatable cylinder (1B) is made of rubber (per Beck teaching), the leaf crush between the two cylinders are considered reduced.

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Response to Arguments

Applicant's arguments with respect to claims 1 and its dependent claims 18, 20, 22-35, and 37-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hart, Jr. (2,538,454) discloses a similar stripping device as claim 1; the device harvests cottons using two rollers (28, 29) with perforations (a, b) for stripping bolls from the plant and fan for creating an air flow to help draw the plant (col.4, lines 34-39 and col.5, lines 9+).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOAN D. MISA whose telephone number is (571) 270-3745. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Will can be reached on (571) 272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Thomas B Will/
Supervisory Patent Examiner
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JDM 4/1/2010